CURRICULUM VITAE

Updated January 2008

A. PERSONAL INFORMATION:

Name and Second Name: Roberto Henry
Family Name: Herrera
Date of Birth: July, 29, 1971.
N.I: 71072903889.
Citizenship: Cuban
Home Address:
Calle 45 #4808 ‰ Ave. 48 y Ave. 50.
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B. ACADEMIC STUDIES

Undergraduate:
Institution: Universidad Central de Las Villas, Santa Clara, Cuba.
Degree Obtained: Telecommunication & Electronics Engineering.
Thesis Title: ECG signal compression using linear prediction techniques.
Year: 1995

Graduate:
Institution: Universidad Central de Las Villas, Santa Clara, Cuba.
Degree Obtained: Master in Electronics.
Thesis Title: Digital processing of ultrasonic signals.
Year: 1998

Graduate:
Institution: Universidad Central de Las Villas, Santa Clara, Cuba.
Degree Obtained: Ph.D.
Thesis Title: Deconvolution of ultrasonic signals in Non Destructive Evaluation.
Year: 2006

C. MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- Member of the Cuban Academy of Science 2006-2010. Technical Sciences section.
- Member of the Cuban Academy of Science 2002-2006. Technical Sciences section.

- Member of the Expert Group in Cybernetics and Automation. Ministry of Science, Technology and Environment, Cienfuegos. Since 2005.
- Member of the Cuban Society of Mathematics and Computer Science. Since 2004.
- Cuban Association of Pattern Recognition. Since 2005.
- National Union of Architects and Construction Engineers (UNAICC). Society of Mechanical, Electrical and Industrial Engineers. Since 1996.
- Alumni Association. Indian Institute for Production Management. India. Since 2004.

D. WORK HISTORY

Period of time: 1995-2002
Institution: Laboratory of Testing Materials, CENEX.
City and country: Cienfuegos, Cuba.
Department: Electronics and Instrumentation
Last position: Researcher

Period of time: 2002-2007
Institution: University of Cienfuegos.
City and country: Cienfuegos, Cuba.
Department: Informatics.
Last position: Assistant Professor. Department Head.

E. INTERNATIONAL ACTIVITIES.

- Academic Interchange, NBCC Saint John, New Brunswick, Canada. "Project Management in IT". Feb.-March 2007.
- Invited Lecturer. Instituto Tecnológico de Zacatepec. Morelos. Mexico. Oct. 2004.
- Invited Speaker. All India Conference on Condition Based Maintenance. Kolkata. India. Dec. 3-4, 2004.

F. POSTGRADUATE STUDIES
1. Robots programming, Universidad Central de Las Villas (UCLV), 1996, Dr. Jorge Sánchez Bermúdez.
2. Electronic Instrumentation for measurement and control, UCLV, 1996, MSc. Hiram del Castillo.
3. Software Engineering, Sept.-Dec., 1996, UCLV, Dr. Giraldo Valdés.
4. Digital Filters, 1997, UCLV, Dr. Juan Lorenzo Ginori.
5. Digital Signal Processing I, 1996, UCLV. Dr. Rubén Orozco Morales.
6. Digital Signal Processing II, 1996, Dr. Rubén Orozco Morales.
7. Advanced topics in Mathematics, 1996, UCLV, M Sc. Taillá.
8. Analog Electronics, advanced topics, 1996, Dr. C. Chaljub.
9. Analog Signal Processing, UCLV, 1997. Dr. O. Pantuso.
10. Microcontrollers and its Applications, UCLV, 1997. Dr. Félix Álvarez Paliza.
11. PLCs, UCLV, 1996. M Sc. Juan Barrios.
12. Digital Electronics and Processors, 1996. UCLV. Dr. Emilio González.
13. ISO Family 9000, CEN Juraguá, May-June, 1998.

14. Selected topics of Materials Science, 1999, Dr. Ing. Rafael Goytizolo.
15. Materials Engineering, UCf, Sept. 1999, Dr. Arcelio Álvarez.
16. Scientific Research Methodology, UCf, 1999, Dr. Eduardo Rodríguez.
17. Experimental Methods for stress determination in metals, Universidad de Cienfuegos, 1999, Dr. Ing. Rafael Goytizolo.
18. Environmental Impact Studies, UCLV, 1999.
19. Windows 2000 y Active Directory. UCf. New Brunswick Community College St. John & St. Andrews. 2003.
20. Pedagogic initial course. UCf. 2003.
21. Certification in Networks Wiring. SUR AUTOMATIZACIÓN Y CONTROL. 2003.
22. Fiber Optics. SUR AUTOMATIZACIÓN Y CONTROL. Feb. 2004.
23. Industrial Electronics & Instrumentation. Indian Institute for Production Management (iiPM). India. Oct-Dec. 2004.
24. Feature Selection and Extraction. X CIARP. Nov. 2005. Havana. Cuba. Dr. Josef Kittler.
25. Conformal Geometric Computing for Perception Action Systems. X CIARP. Nov. 2005. Havana. Cuba. Dr. Eduardo Bayro-Corrochano.

G. THESIS AS TUTOR

- Design an Ultrasonic Thickness Meter based on MCU 68HC811E2, Faculty of Electrical Engineering, UCLV, 1997. Diploma.
- Ultrasonic Testing Methodology of welded unions in Steam Power Plants, Faculty of Mechanical Engineering, University of Cienfuegos, July 2001. Diploma
- Study of remnant life in a storage gasometer of the Refinery "Ñico López", Faculty of Mechanical Engineering, University of Cienfuegos, 2003. Master Thesis.
- Application of Time of flight diffraction (TOFD) method for crack identification in metals, Faculty of Mechanical Engineering, University of Cienfuegos, 2003. Master Thesis.

H. TEACHING EXPERIENCE

- Teleinformatics I. Informatics Engineering. University of Cienfuegos.
  o Information Theory, Coding, Cryptography, Data Communication.
- Computer Machines I. Informatics Engineering. University of Cienfuegos.
  o Assambler Language INTEL processors x86 architecture.
- Computer Machines II. Informatics Engineering. University of Cienfuegos.
  o Peripherals Programming and Control.
- Chairman of Diplomaed in Telematics. Informatics Engineering. University of Cienfuegos.
  o Professor of Data Transmission.
- Postgraduate courses on Digital Signal Processing and MatLab. Informatics Engineering. University of Cienfuegos.
- Digital Signal Processing. Instituto Tecnológico de Zacatepec (ITZ). Morelos Mexico. October, 2004.
- International course: Modeling Communication Systems with MatLab. Cienfuegos, 2006.

I. RESEARCH ACTIVITIES AS PRINCIPAL.

- Study of metal deformation. CENEX-CIS, 1996.
  - Results: Design a prototype using strain gauges.
- Design an ultrasonic thickness meter. CENEX-UCLV, 1997.
  - Results: Functional prototype of thickness meter using the microcontroller MCU 68HC811E2.
- Digital signal processing techniques applied to ultrasonic testing of heterogeneous materials. CENEX-CEETI (UCLV). 1998.
  - Results: Algorithms and software to determine material properties and noise suppression.
- Applications of Ultrasonic and Digital Signal Processing to Defects Characterization in Concrete. UCf, ICIMAF, CTDMC, Project Funded by the Ministry of Construction PRC 02-41/03. 2006.
  - Results: Technology Transfer for Impact-Echo Testing, Image conforming by SAFT (Synthetic Aperture Focusing Testing). New Algorithm for Ultrasonic Signal Deconvolution using Wavelet Transform and Higher Order Spectral Analysis.

J. PUBLICATIONS

1. Herrera R.H. & Orozco R., "Deconvolution Algorithms in Ultrasonic Signals based in HOS models". Annual Report UCf 2006, ISBN 978-959-257-123-5. [in spanish]
2. Herrera R.H., Orozco R. & Rodríguez M., "Wavelet-based deconvolution of ultrasonic signals in non destructive evaluation". Journal of Zhejiang Univ SCIENCE A. Vol. 7 No.10. 2006, Pages 1748-1756. ISSN: 1009-3095. DOI:10.1631/jzus.2006.A1748.
3. Herrera R.H., Calas, H., Moreno E. & Orozco R., Deconvolution of A-scan signals in Synthetic Aperture Focusing Testing (SAFT). Annual Report UCf 2005. ISBN: 959-257-081-7. [in spanish]
4. Herrera R.H., Moreno E., Calas H. & Orozco R., "Blind Deconvolution of Ultrasonic Signals Using High-Order Spectral Analysis and Wavelets", Lecture Notes in Computer Science, Volume 3773, Oct 2005, Pages 663 – 670.
5. Herrera R.H., Orozco R., Calas H. & Moreno E., "Deconvolution of Ultrasonic Signals by Wavelet based regularization of the Wiener Filter". SIE' 2005. Sta Clara, Cuba. June 21-23, 2005. ISBN: 959250201-3. [in spanish]
6. Herrera R.H., Moreno E. & Borroto L., "Spectral Analysis of modals frequencies in Impact-Echo Testing". Annual Report UCf 2004. ISBN:959-257-070-1. [in spanish]
7. Herrera R.H., Moreno E., Calas H. & Borroto L., "Applications of Digital Signal Processing in Non Destructive Evaluation by Ultrasonic Method". Proceeding All India Conference on Condition Based Maintenance. Kolkata. India. Dec. 3-4, 2004.
8. Herrera R.H., "DSP in NDT". Proceeding of CIMI 2004. Zacatepec. México. Oct. 6-9, 2004.
9. Herrera R.H. & Santana I., "Implementation of TOFD using conventional Ultrasonic Equipments". Annual Report UCf 2003. ISBN: 959-257-055-8. [in spanish]
10. Noya A. y Herrera R.H., "The Parallel Port: Theory and Applications". Electronic Book. Edit. Universo Sur, Universidad de Cienfuegos. 2003. ISBN: 959-257-019-1. [in spanish]
11. Santana I. & Herrera R. H., Cracks evaluation using TOFD. Proceeding of XIX Congress COPIMERA. Dominican Republic. 17-20 July. 2003. [in spanish]

12. Herrera R.H., Gayoso R. & Calas I., "Ultrasonic Testing to High Performance Concrete in the Central Region of Cuba". Annual Report UCf. 2002. ISBN: 959-257-055-8. [in spanish]
13. Herrera R.H., "New trends in the determination of physical and mechanical properties of metals by ultrasonic testing". Edit. Samuel Feijoo, UCLV, 2000. ISBN: 959-250-009-6. [in spanish]

K. PERSONAL SKILLS AND COMPETENCES

Mother Tonge: Spanish

Other Language: English

Understanding		Speaking		Writing
Listening	**Reading**	**Spoken Interaction**	**Spoken Production**	
Proficient User	Proficient User	Basic user	Basic user	Proficient User

Social skills and competences:

- **Team work:** I have worked in various types of teams from research teams to decision makers.
- **Mediating skills:** I work on the borders between students, young trainers, experienced professors and researchers.
- **Intercultural skills:** I am experienced at working in different countries such as Mexico, India and Canada; also I have worked with many students from Africa and the Caribbean.

Computer skills and competences:

- Advanced in PCs fixing and maintenance.
- All Microsoft Windows OS. 2000, XP, Server 2003, Vista.
- Competent with most Microsoft Office programs.
- Mathematical Software: MatLab, Maple, Derive, R.
- Text Processor: LaTex
- Basics Knowledge of: Data Base systems, Web Programming (HTML, ASP)